

## Claims

1. Snap fastening (10, 110, 210, 310, 410, 510, 610, 710, 810, 910, 1010, 1110, 1210, 1310, 1410, 1510, 1610, 1710, 1810, 1910) for fixing a thin wall (14), such as a housing wall, door leaf, shutter, or the like, which is provided with an opening (13), to a wall support (16) such as a housing frame, door frame, wall opening edge, or the like, which is likewise provided with an opening, with a base part (18) that can be arranged at the wall support (16) in its opening (12), with a head part (20) which extends away from this base part (18) and which has a diameter (49) that initially increases and then decreases again in its longitudinal section from the end of the head part (20) in direction of the base part (18), which head part (20) is a male plug-in part which, by overcoming a spring force (28) acting radially outward in direction of the diameter (49), can be received by an undercut female plug-in part (13) that is formed or carried by the opening (13) of the thin wall (14), characterized in that the head part (20) is a guide or channel (33, 34) for one or two or more push elements or holding elements (22, 23) which are pushed by means of at least one spring (28) into a position in which they project out over the end of the guide or channel (33, 34), and the ends (51, 53) of the push elements or holding elements (22, 23) projecting from the guide or channel are triangular or ball-shaped (Figs. 7B, 8, 9, Fig. 6) in a projection plane extending perpendicular to the thin wall (14).

2. Snap fastening according to claim 1, characterized in that the female plug-in part (13) is formed by a preferably substantially rectangular opening (13) in the thin wall (14), preferably in a bevel area at the edge of the thin wall (14).

3. Snap fastening according to claim 1 or 2, characterized in that the push elements (23) comprise two plates which lie next to one another or one behind the other so as to be displaceable, each of the two plates having an opening (47) which is elongated in the movement direction and which forms, individually or jointly, a receiving space for a spiral pressure spring (28).

4. Snap fastening according to claim 3, characterized in that, for the common receiving space for the spring (28), the openings (47) are arranged so as to be moved away from the ball-shaped or triangular free ends in such a way that the shared spring (28) forces the two plates (23) apart in their movement direction (49).

5. Snap fastening according to claim 3 or 4, characterized in that the edges of the

openings (46, 47, 146) have projections (e.g., 186) or recesses for fixing the spring (28) and the plates (22, 23, 122).

6. Snap fastening according to claim 4 or 5, characterized in that the two plates (22, 23, 122) have a notch (79) at their outer longitudinal edge for limiting their longitudinal movement by means of a shoulder, projection, plug, or pin (66) which projects into the notch (79).

7. Snap fastening according to claim 4, 5 or 6, characterized in that the two plates (123) are guided so as to be displaceable longitudinally in a U-shaped housing (35) whose leg ends are fastened to a base plate (118, 218) formed by the base part (18) or are formed integral with the base plate (118, 218).

8. Snap fastening according to claim 7, characterized in that the U-shaped housing (35) has an opening (32) in the web area for receiving a pin (66) or plug (66).

9. Snap fastening according to one of claims 1 to 8, characterized in that the base part (218) comprises a screw bolt (219).

10. Snap fastening according to one of claims 1 to 8, characterized in that the base part is formed by a fastening plate (118) provided with fastening holes.

11. Snap fastening according to one of claims 1 to 8, characterized in that the base part (118) is formed by a plate (118) which overlaps the longitudinal edges of the opening (13) in the thin wall (14).

12. Snap fastening according to claim 11, characterized in that the base part (318) is a side of a pressed metal profile such as an aluminum profile (Fig. 15B).

13. Snap fastening according to claim 11, characterized in that the base part (318') is a side of a rolled sheet-metal profile such as a sheet-steel profile (Fig. 16B).

14. Snap fastening according to claim 11, characterized in that the base part (418) is a side of an injection-molded plastic profile (Figs. 19A, 19B).

15. Snap fastening according to claim 11, characterized in that the base part (322) has substantially the same construction, in particular a mirror-inverted construction of the head part (Fig. 12; 323, Figs. 17A, 17B, 17C, 18, 20).

16. Snap fastening according to claim 15, characterized in that the two parts (22,

23) have a common base plate (18, 118) lying between them.

17. Snap fastening according to claim 16, characterized in that the base plate (18) of the head part (320) is formed or carried by the web of the base part (319) (Figs. 11B, 11C).

18. Snap fastening according to claim 16, characterized in that the base part (319) has a greater longitudinal extension than the head part (320) and, with its web, forms support shoulders (57) for the thin wall (14).

19. Snap fastening according to claim 16, 17 or 18, characterized in that the free ends (51) of the plates (22) of the base part (19) have an asymmetric roof shape (26, 24) such that the base part (19) can be inserted into a suitable opening (12) in a thin wall or wall support (16) by inserting the longitudinally displaceable plates (22) while guiding the part (26) of the roof shape (26) with the flatter inclination, but a backward movement while guiding the steeper part (24) of the roof is impossible because the plates (22) are self-locking in their guide (19).

20. Snap fastening according to one of claims 1 to 19, characterized in that a tool such as a key (68) which is capable of pulling back the push elements against the spring force (28) by turning it can be inserted from the front and/or back into the housing (935) comprising the self-locking snap fastening (Figs. 25A to 27C; Figs. 36, 37).

21. Snap fastening according to one of claims 1 to 20, characterized in that the housing (1335) is provided with fastening cams (37) which can be clipped into a through-opening (1313) in the thin wall (1314), and in that an actuating wheel or rotary knob (43) or key by which the push elements (1322) can be pulled back in the housing (1335) project from the housing (1335).

22. Snap fastening according to claim 21, characterized in that the actuating wheel (46) locks in the open position.

23. Snap fastening according to one of claims 7 to 22, characterized in that a grip device (45) projects from the housing (1335).

24. Snap fastening according to one of claims 19 to 23, characterized in that the housing comprises a snap fastening (1523) which is not self-locking as well as a snap fastening (1522) which is self-locking (Figs. 45A, 45B, 45C; Fig. 46).

25. Snap fastening according to claim 24, characterized in that the two types of

snap fastening (1522, 1523) are arranged in the housing (Fig. 46) so as to be offset relative to one another with respect to the distance from the plane of the thin wall (1514).

26. Snap fastening according to claim 10, characterized in that the base part (1618) has elongated holes as fastening holes.

27. Drawer or rack with a thin-walled front plate, characterized in that the front plate is the thin wall (1314) and the drawer receptacle (1316) is the wall support according to one of claims 1 to 19.

28. Cabinet with a thin wall or door leaf, characterized by a snap fastening or a plurality of snap fastenings according to one of claims 1 to 26.

29. Cabinet according to claim 28, characterized in that one or more handles or recessed grips (115) are arranged in openings in the thin wall (14) in which a snap fastening similar to that of the base part according to claims 1 to 23 engages.

30. Cabinet according to claim 29, characterized in that the thin wall (114) has webs (17) with openings (21) for receiving the symmetrically roof-shaped ends (53) of the snap fastening (not self-locking) according to one of claims 1 to 26.

31. Snap fastening according to one of claims 1 to 19 as connector for two thin walls (1714, 1716), such as sheet metal, which are provided at the connection location with openings (1712, 1713), characterized in that the base part (1718) and head part (1720) have a shared housing (1735) with holding elements (1722, 1722') which are arranged in both parts (1718, 1720) in an approximately mirror-inverted manner with respect to the center line of the housing and which are shaped in such a way that they are self-locking in the insertion direction against spring force (1728) and engage the edges of the opening by an inclined surface (1724, 1724'), wherein a support edge (1718) which covers the contacting edges of the opening (1712) in one wall (1716) and which can be received (Figs. 51A to 53) by the opening (1713) in the second wall (1714) extends along the outer wall of the housing (1735) at the height of the inclined surface (1724) of the holding elements of the head part (1720) substantially parallel to the insertion direction.

32. Snap fastening according to claim 1, characterized in that the holding elements (1822) are levers arranged at a distance (A) from the thin wall (1816) so as to be rotatable around an axis parallel to the plane of the thin wall (1816) (Fig. 54)

33. Snap fastening according to claim 1, characterized in that the holding elements (1922) are levers arranged at a distance from the thin wall (1916) so as to be rotatable around an axis perpendicular to the plane of the thin wall (1916). (Figs. 55A to 55C)

34. Snap fastening according to claim 21, 22 or 23, characterized in that the fastening cams are replaced by spring parts (2037) which can be inserted into the housing (2018, 2020).

35. Snap fastening according to claim 21, 22, 23, or 24, characterized in that the rotary knob (2043) and/or the housing (2018, 83) have/has markings (75, 77, 85) that indicate the operating position of the push elements (2022) (open, closed).

36. Snap fastening according to claim 35, characterized in that the marking on the housing (on the rotary knob) is a colored dot or surface region (75, 77), and the marking at the rotary knob (at the housing) is at least a notch or an opening (85) which is arranged in such a way that it allows the colored dot or surface region to be seen in a certain position of the rotary knob relative to the housing (e.g., in two end positions).

37. Snap fastening according to claim 36, characterized in that the rotary knob (2043) forms a flange (73) which has the color markings (75, 77), and in that the flange (83) or base part of the housing forms the notches or openings (85).